Risk Assessment and Surveillance

Real-time Casualty Analysis, Trending, and Reporting for the Department of Defense Leadership

Researchers at NHRC have been tracking each casualty incurred in overseas contingency operations since the beginning of OIF and OEF in October 2001. Over time, this capability has evolved into the EMED, which includes all Service Members injured during deployment. Each casualty is identified within seven days of injury, coded by diagnoses and Injury Severity Score (ISS), and entered into the EMED for analysis. Based on the EMED, NHRC provides a weekly analysis of all combat casualties occurring during overseas contingency operations to the JTAPIC PMO. For each wounded Service Member, the medical data obtained from EMED is thoroughly reviewed at NHRC and a clinical profile is developed describing a casualty's injury characteristics. Each casualty's injuries are then coded on various diagnostic and injury severity taxonomies by registered nurses. These detailed clinical profiles are then made available to JTAPIC Program partners for additional analysis in which tactical data (e.g., weapon type, explosive weight, and strike point) are matched to the injury profiles. Since January 2014, NHRC has provided DoD with 2,290 detailed clinical profiles. NHRC also provides a trend report on sentinel injury types to the JTAPIC Program, the Headquarters Marine Corps, the US Marine Corps (USMC) System Command, BUMED, and EACE. In addition, 3,248 casualty medical records were reviewed by NHRC medical staff for compliance with directives associated with the BECIR for current theater operations. The availability of weekly data on combat casualties has allowed the intelligence community greater capability to monitor the evolution of insurgency threats. This permitted more rapid responses to identify and defeat new and emerging threats, directly reducing casualty rates. The trend reports have alerted DoD leadership to spikes in occurrence rates, allowing DoD to focus investigations on trends that represent a meaningful change in the running average of injury types over time. This has saved precious resources and has optimized investigations about what is causing a rise in injury risk to Service Members in theater. Additionally, the mapping of medical to tactical data allows developers to design targeted modifications to improve vehicles and PPE, thereby reducing the frequency and severity of injury. By precisely targeting the necessary body coverage, the minimum amount/weight of PPE is worn. Furthermore, recent enhancements in up-armoring of the Mine Resistant Ambush Protected (MRAP) and Stryker vehicle families have been implemented as a function of this reporting.